



2iE : AN INTERNATIONAL SCIENTIFIC AND CAPACITY BUILDING PLATFORM IN THE HEART OF AFRICA



High Education & Research Institution

- On site High Education : BSc, MSc and PhD
- Distance learning High Education : BSc and MSc
- Vocational training: short courses and professional degrees
- Research and Development: Focus on innovation
- Engineering



2010-2015 Research Activities

■ Development of Research based on

□ An International PhD program

- Partnership with 14 Universities (France, Ghana, Switzerland, Ivory Coast, Burkina and USA)

□ 4 thematic programs:

- Secure Water for Africa: SWAF
- Access to Sustainable Energy for All in Africa : ASENAA
- Sustainable and Safety Urban Life : SSAUL
- Innovation and Green Business for Africa : IGBA

□ 6 international standard laboratories:

- Water
- Energy (Renewable)
- Environment
- Eco-materials

Laboratory of Solar Energy and Energy Savings (SEESL)

- Accurate assessment of the solar resource and energy needs in Africa
 - ✓ *Elaboration of database and maps of DNI (direct normal irradiation) in Africa*
 - ✓ *Elaboration of maps for energy needs in Africa (south of Sahara)*
- Concentrating solar power plants (CSPP)
- Bioclimatic architecture & Solar PV / thermal (low temperature) Systems
- Optimal design and thermodynamic optimization of energy systems & Energy Efficiency



Pilot of « Flexy Energy »



Laboratory of Biomass Energy and Biofuels (LBEB)

- Alternative energy for rural areas: biomass and bio-fuel, thermochemical conversion
- Adaptation of gasoline engines to vegetal oils
- Esterification of vegetal oils to biofuels
- Activated carbon for water and waste treatment

2iE/LBEB: Research on Biofuels





www.2ie-edu.org

Merci!

Our main partners





2iE PHASE II 2011-2015

Increase Positive Impacts of 2iE on Economical Development and Poverty Reduction in Africa by building Human Capital and Strengthening Innovation Capacity in the fields of Water, Energy, Infrastructures and Environment

Secure Water for Africa (SWAf)

- **An international research program to anticipate and adapt to water shortage due to climate change in Africa**
 - Goals (first phase):
 - Assess CC risks in West Africa and propose adaptation strategies based on local know how;
 - Capacity building through training water specialists on methods of adaptation to climate change
 - Facilitate political decision making process on ECOWAS scale, through providing efficient tools for decision making.

Secure Water for Africa (SWAf)

■ Expected results:

- Climate change impacts on water resources and environment are assessed, as well as political, social and economic risks in Africa
- Tools are developed to assess climate change risks and impact on water resources
- Qualified staff is trained to develop and implement risks reduction measures, climate change adaptation strategies
- Efficient Water and environmental tools on national and regional scales are developed

Access to Sustainable Energy for All in Africa (ASENAA)

- **An international research program to adapt and develop sustainable energy in favour of a wider energy access in Africa**

- **Goals (first phase):**

- West African Poor people energy assess is improved based on local potentialities development and adapted strategies;
- Capacity building through energy specialists training on technology and methods on carbon saving economy
- Facilitate political decision making process on ECOWAS scale, through the provision of efficient tools and accurate data..

Access to Sustainable Energy for All in Africa (ASENAA)

■ Expected results:

- Implementation and demonstration of efficient technology at small and large scale under local conditions to prevent potential negative impacts of these technologies.
- Biomass and solar energy technologies promotion to produce sustainable appropriate heat, power and transport fuels to satisfy African domestic market
- Decision making tools and methodology are developed to allow the setting up of regulation appropriate to business development and to facilitate development of industries
- SME private sector emergence through business incubation to ensure the dissemination and the appropriation of the technologies and deliver energy services to rural and peri urban areas